IN THE CLAIM

1    1. (Currently Amended) A method for managing a memory system having a plurality of

2         subsystems, comprising the steps of:

3              upon accessing the subsystems for a piece of data used by a first process,

4                   determining an access time to acquire the piece of data from a

5                        subsystem ~~in the memory system~~;

6                   comparing the determined access time to a threshold; and

7                   taking an action based on results of the comparing step;

8              wherein

9                   a memory table includes entries pointing to data blocks storing data

10                       for at least one subsystem;

11                  the entries are used to locate the data stored in the data blocks; and

12                  while the first process is being executed, the memory table working

13                       with a memory manager ~~managing~~ manages the data blocks

14                       in parallel with ~~independent of~~ an operating system working

15                       with the memory system and in parallel with ~~independent of~~

16                       a processor working with the memory system.

1    2. (Previously Presented) The method of claim 1 wherein a data block containing the

2         piece of data is placed in the memory system based on information selected in one

3         or a combination of:

4              a movement pattern of data in the data block,

5              a structure of the memory system, and

6              a cache-level architecture in the memory system.

1    3. (Canceled)

1    4. (Canceled)

1    5. (Previously Presented) The method of claim 1 further comprising the steps of:

2            the memory table using a physical address of a memory page

3                    corresponding to the piece of data to convert to a location address

4                    corresponding to an entry pointing to the location of the piece of

5                    data.

1    6. (Currently Amended) A method for managing a memory system, comprising the steps

2        of:

3            upon accessing the memory system for a piece of data used by a first

4                    process,

5                    a processor working with the memory system continuing its

6                            functions until it is stalled;

7                    determining an access time to acquire the piece of data;

8                    from the acquired access time, determining a time taken to

9                            complete the memory access;

10                   comparing [[a]] the time taken to complete the memory access to a

11                           threshold; and

12                   taking an action based on results of the comparing step.

1    7. (Original) The method of claim 6 wherein the action is selected in one or a combination

2        of

3                postponing executing the first process and allowing executing a second

4                    process;

5                causing the first process to be switched to a second process; and

6                causing a performance monitor on the memory system or on a system

7                    using the memory subsystem.

1    8. (Original) The method of claim 6 further comprising the step of polling a latency

2        manager for the time taken to complete the memory access; the latency manger

3        being part of managing the memory system.

1    9. (Previously Presented) The method of claim 6 further comprising the steps of:

2                using a memory table having entries pointing to data blocks storing data

3                    for at least one subsystem; and

4                using the entries to locate the data stored in the data blocks.

1    10. (Currently Amended)  The method of claim 9 wherein, while the first process is being

2        executed, the memory table working with a memory manager ~~managing~~ <u>manages</u>

3        the data blocks <u>in parallel with</u> ~~independent of~~ a processor working with the

4        memory system and <u>in parallel with</u> ~~independent of~~ an operating system working

5        with the memory system.

1    11.  (Currently Amended) A method for managing a memory system <u>having a plurality of</u>

2        <u>subsystems each corresponding to an access time,</u> the method comprising the steps

3        of:

4    upon accessing the memory system for a piece of data used by a first

5        process

6        counting a time elapsed from the time the data access starts; the

7            counted time being increased as the data is being accessed;

8        comparing the counted time to a threshold being selected from an

9            access time of a subsystem; and

10        based on results of the comparing step, taking an action selected in

11        one or a combination of

12            postponing executing the first process and allowing

13                executing a second process;

14            causing the first process to be switched to a second process;

15                and

16            causing a performance monitor on the memory system or on

17                a system using the memory system.


1    12. (Previously Presented) The method of claim 11 further comprising the steps of:

2            using a memory table having entries pointing to data blocks storing data

3                for at least one memory subsystem; and

4            using the entries to locate the data stored in the data blocks.


1    13. (Currently Amended) A computer-readable medium embodying instructions for a

2        computer to perform a method for managing a memory system having a plurality

3        of subsystems, the method comprising the steps of:

4            upon accessing the subsystems for a piece of data used by a first process,

5                determining an access time to acquire the piece of data from a

6                subsystem in the memory system;

7        comparing the determined access time to a threshold; and

8        taking an action based on results of the comparing step;

9        wherein

10        a memory table includes entries pointing to data blocks storing data

11        for at least one subsystem;

12        the entries are used to locate the data stored in the data blocks; and

13        while the first process is being executed, the memory table working

14        with a memory manager ~~managing~~ <u>manages</u> the data blocks

15        <u>in parallel with</u> ~~independent of~~ an operating system working

16        with the memory system and <u>in parallel with</u> ~~independent of~~

17        a processor working with the memory system.

1    14. (Previously Presented) The computer-readable medium of claim 13 wherein a data

2        block containing the piece of data is placed in the memory system based on

3        information selected in one or a combination of:

4        a movement pattern of data in the data block,

5        a structure of the memory system, and

6        a cache-level architecture in the memory system.

1    15. (Canceled)

1    16. (Canceled)

1    17. (Previously Presented) The computer-readable medium of claim 13 wherein the

2        method further comprises the steps of:

3    the memory table using a physical address of a memory page

4      corresponding to the piece of data to convert to a location address

5      corresponding to an entry pointing to the location of the piece of

6      data.

1  18. (Currently Amended) A computer-readable medium embodying instructions for a

2    computer to perform a method for managing a memory system, the method

3    comprising the steps of:

4      upon accessing the memory system for a piece of data used by a first

5      process,

6      a processor working with the memory system continuing its

7       functions until it is stalled;

8      <u>determining an access time to acquire the piece of data;</u>

9      <u>from the acquired access time, determining a time taken to</u>

10      <u>complete the memory access;</u>

11      comparing [[a]] <u>the</u> time taken to complete the memory access to a

12      threshold; and

13      based on results of the comparing step, taking an action.

1  19. (Original)  The computer-readable medium of claim 18 wherein the method further

2    comprises the step of polling a latency manager for the time taken to complete the

3    memory access; the latency manger being part of managing the memory system.

1  20. (Previously Presented) The computer-readable medium of claim 18 wherein the

2    method further comprises the steps of:

3       using a memory table having entries pointing to data blocks storing data

4       for at least one subsystem; and

5       using the entries to locate the data stored in the data blocks.

1    21.  (Currently Amended) A computer-readable medium embodying instructions for a

2       computer to perform a method for managing a memory system having a plurality

3       of subsystems each corresponding to an access time, the method comprising the

4       steps of:

5       upon accessing the memory system for a piece of data used by a first

6       process,

7       counting a time elapsed from the time the data access starts; the

8       counted time being increased as the data is being accessed;

9       comparing the counted time to a threshold being selected from an

10       access time of a subsystem; and

11       based on results of the comparing step, taking an action selected in

12       one or a combination of

13       postponing executing the first process and allowing

14       executing a second process;

15       causing the first process to be switched to a second process;

16       and

17       causing a performance monitor on the memory system or on

18       a system using the memory subsystem.

1    22. (Currently Amended) The computer-readable medium of claim 21 wherein the method

2       further comprises the steps of:

3          using a memory table having entries pointing to data blocks storing data

4                for at least one memory subsystem; and

5          using the entries to locate the data stored in the data ~~blocks~~ blocks.

1    23. (Currently Amended) An apparatus for managing a memory system having a plurality

2       of subsystems, comprising:

3          means for, upon accessing the subsystems for a piece of data used by a first

4              process,

5              determining an access time to acquire the piece of data <u>from a</u>

6                  <u>subsystem</u> ~~in the memory system~~;

7              comparing the determined access time to a threshold; and

8              taking an action based on results of the comparing step;

9        wherein

10            a memory table includes entries pointing to data blocks storing data

11                for at least one subsystem;

12            the entries are used to locate the data stored in the data blocks; and

13            while the first process is being executed, the memory table working

14                with a memory manager ~~managing~~ <u>manages</u> the data blocks

15                <u>in parallel with</u> ~~independent of~~ an operating system working

16                with the memory system and <u>in parallel with</u> ~~independent of~~

17                a processor working with the memory system.

1    24. (Previously Presented) The apparatus of claim 23 wherein a data block containing the

2       piece of data is placed in the memory system based on information selected in one

3       or a combination of:

4          a movement pattern of data in the data block,

5     a structure of the memory system, and

6     a cache-level architecture in the memory system.

1 25. (Canceled)

1 26. (Canceled)

1 27. (Previously Presented) The apparatus of claim 23 wherein the memory table using a

2    physical address of a memory page corresponding to the piece of data to convert to

3    a location address corresponding to an entry pointing to the location of the piece of

4    data.

1 28. (Currently Amended) An apparatus for managing a memory system, comprising:

2     upon accessing the memory system for a piece of data used by a first

3      process,

4      a processor for working with the memory system and for

5       continuing its functions until it is stalled;

6      <u>determining an access time to acquire the piece of data;</u>

7      <u>from the acquired access time, determining a time taken to</u>

8       <u>complete the memory access;</u>

9      means for comparing [[a]] <u>the</u> time taken to complete the memory

10      access to a threshold; and

11      means for taking an action based on results of comparing.

1    29. (Original) The apparatus of claim 28 further comprising means for polling a latency

2        manager for the time taken to complete the memory access; the latency manger

3        being part of managing the memory system.

1    30. (Previously Presented) The apparatus of claim 28 further comprising a memory table

2        having entries pointing to data blocks storing data for at least one subsystem; the

3        entries being used to locate the data stored in the data blocks.

1    31. (Currently Amended) An apparatus for managing a memory system having a plurality

2        of subsystems each corresponding to an access time, comprising:

3            upon accessing the memory system for a piece of data used by a first

4                process,

5                means for counting a time elapsed from the time the data access

6                    starts; the counted time being increased as the data is being

7                    accessed;

8                means for comparing the counted time to a threshold being selected

9                    as from access time of a subsystem; and

10              means for taking an action selected in one or a combination of

11                  postponing executing the first process and allowing

12                    executing a second process;

13                causing the first process to be switched to a second process;

14                    and

15                causing a performance monitor on the memory system or on

16                    a system using the memory subsystem.

1   32. (Previously Presented) The apparatus of claim 31 further comprising a memory table

2        having entries pointing to data blocks storing data for at least one memory

3        subsystem; the entries being used to locate the data stored in the data blocks.


1   33. (Previously Presented) The method of claim 5 wherein the physical address of the

2        memory page is converted from a virtual address of the piece of data.


1   34. (Previously Presented) The computer-readable medium of claim 17 wherein the

2        physical address of the memory page is converted from a virtual address of the

3        piece of data.


1   35. (Previously Presented) The apparatus of claim 27 wherein the physical address of the

2        memory page is converted from a virtual address of the piece of data.